



## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

#### **14 CFR Part 39**

**[Docket No. FAA-2021-0456; Project Identifier MCAI-2021-00212-T;**

**Amendment 39-21601; AD 2021-12-14]**

**RIN 2120-AA64**

**Airworthiness Directives; Yaborã Indústria Aeronáutica S.A. (Type Certificate**

**Previously Held by Embraer S.A.) Airplanes**

**AGENCY:** Federal Aviation Administration (FAA), DOT.

**ACTION:** Final rule; request for comments.

**SUMMARY:** The FAA is superseding Airworthiness Directive (AD) 2020-08-11, which applied to all Yaborã Indústria Aeronáutica Model ERJ 190-300 and ERJ 190-400 airplanes. AD 2020-08-11 required revising the existing airplane flight manual (AFM) procedures associated with messages of smoke in the electronic bays presented on the respective engine indication and crew alerting system (EICAS). This AD continues to require revising the existing AFM procedures, and adds requirements for a terminating modification of the electrical wiring of the mid-electronic bay and backup smoke detectors; as specified in an Agência Nacional de Aviação Civil (ANAC) AD, which is incorporated by reference. This AD was prompted by a failure propagation test, which revealed that under certain conditions, the smoke detection system of the electrical bays erroneously indicated the presence of smoke via the respective EICAS messages. The FAA is issuing this AD to address the unsafe condition on these products.

**DATES:** This AD becomes effective [INSERT DATE 15 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in this AD as of [INSERT DATE 15 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

The FAA must receive comments on this AD by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

**ADDRESSES:** You may send comments, using the procedures found in 14 CFR 11.43 and 11.45, by any of the following methods:

- Federal eRulemaking Portal: Go to <https://www.regulations.gov>. Follow the instructions for submitting comments.
- Fax: 202-493-2251.
- Mail: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE, Washington, DC 20590.
- Hand Delivery: Deliver to Mail address above between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

For material incorporated by reference (IBR) in this AD, contact National Civil Aviation Agency (ANAC), Aeronautical Products Certification Branch (GGCP), Rua Dr. Orlando Feirabend Filho, 230 - Centro Empresarial Aquarius - Torre B - Andares 14 a 18, Parque Residencial Aquarius, CEP 12.246-190 - São José dos Campos - SP, BRAZIL, Tel: 55 (12) 3203-6600; E-mail: [pac@anac.gov.br](mailto:pac@anac.gov.br); Internet [www.anac.gov.br/en/](http://www.anac.gov.br/en/). You may find this IBR material on the ANAC website at <https://sistemas.anac.gov.br/certificacao/DA/DAE.asp>. You may view this IBR material at the FAA, Airworthiness Products Section, Operational Safety Branch, 2200 South 216th St., Des Moines, WA. For information on the availability of this material at the FAA, call 206-231-3195. It is also available in the AD docket on the Internet at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2021-0456.

## **Examining the AD Docket**

You may examine the AD docket on the Internet at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2021-0456; or in person at Docket Operations between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this AD, any comments received, and other information. The street address for Docket Operations is listed above.

**FOR FURTHER INFORMATION CONTACT:** Krista Greer, Aerospace Engineer, Large Aircraft Section, International Validation Branch, FAA, 2200 South 216th St., Des Moines, WA 98198; telephone and fax 206-231-3223.

## **SUPPLEMENTARY INFORMATION:**

### **Background**

The FAA issued AD 2020-08-11, Amendment 39-19903 (85 FR 27112, May 7, 2020) (AD 2020-08-11), which applied to all Yaborã Indústria Aeronáutica Model ERJ 190-300 and ERJ 190-400 airplanes. AD 2020-08-11 required revising the existing AFM procedures associated with messages of smoke in the electronic bays presented on the respective EICAS. The FAA issued AD 2020-08-11 to provide the flightcrew with revised AFM procedures for responding to erroneous indications of smoke in the electrical bays presented on the EICAS. The AFM procedures are intended to prevent loss of all electrical digital current (DC) essential buses, causing loss of electrical power for critical systems of the airplane.

### **Actions Since AD 2020-08-11 Was Issued**

Since the FAA issued AD 2020-08-11, the FAA has determined that it is necessary to mandate a modification to correct the root cause of erroneous indications of smoke in the electrical bays presented on the EICAS that will allow for removal of the AFM revision required by AD 2020-08-11. Production airplanes are not included in the applicability of this AD because the modification required by this AD is incorporated

during production.

ANAC, which is the aviation authority for Brazil, has issued ANAC AD 2021-02-01, effective February 15, 2021; corrected February 23, 2021 (ANAC AD 2021-02-01) (also referred to as the Mandatory Continuing Airworthiness Information, or the MCAI); to correct an unsafe condition for all Yaborã Indústria Aeronáutica Model ERJ 190-300 and ERJ 190-400 airplanes. ANAC AD 2021-02-01 superseded ANAC Emergency AD 2019-12-01, effective December 9, 2019 (which corresponds to FAA AD 2020-08-11).

This AD was prompted by a failure propagation test, which revealed that when complete loss of the electrical DC essential bus 2 was induced, the smoke detection system of the forward and aft electrical bays erroneously indicated the presence of smoke via the respective EICAS messages. When these messages are displayed, the existing AFM procedures require the flightcrew to turn off the essential electrical buses DC ESS BUS 1 and DC ESS BUS 3. The FAA is issuing this AD to address a loss of all electrical DC essential buses, and consequent loss of electrical power for critical systems of the airplane. See the MCAI for additional background information.

### **Explanation of Retained Requirements**

Although this AD does not explicitly restate the requirements of AD 2020-08-11, this AD retains all of the requirements of AD 2020-08-11. Those requirements are referenced in ANAC AD 2021-02-01, which, in turn, is referenced in paragraph (g) of this AD.

### **Related Service Information under 1 CFR Part 51**

ANAC AD 2021-02-01 describes temporary revisions to the existing AFM procedures associated with messages of smoke in the electronic bays presented on the EICAS, and removal of those temporary revisions once a modification of certain electrical wiring is completed. ANAC AD 2021-02-01 also describes procedures for modification of electrical wiring of the mid-electronic bay and backup smoke detectors,

which is terminating action for the temporary revisions to the AFM. This material is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in the ADDRESSES section.

#### **FAA's Determination**

This product has been approved by the aviation authority of another country, and is approved for operation in the United States. Pursuant to the FAA's bilateral agreement with the State of Design Authority, the FAA has been notified of the unsafe condition described in the MCAI referenced above. The FAA is issuing this AD because the FAA has evaluated all pertinent information and determined the unsafe condition exists and is likely to exist or develop on other products of the same type design.

#### **Requirements of this AD**

This AD requires accomplishing the actions specified in ANAC AD 2021-02-01 described previously, as incorporated by reference, except for any differences identified as exceptions in the regulatory text of this AD.

#### **Explanation of Required Compliance Information**

In the FAA's ongoing efforts to improve the efficiency of the AD process, the FAA initially worked with Airbus and EASA to develop a process to use certain EASA ADs as the primary source of information for compliance with requirements for corresponding FAA ADs. The FAA has since coordinated with other manufacturers and civil aviation authorities (CAAs) to use this process. As a result, ANAC AD 2021-02-01 is incorporated by reference in this AD. This AD, therefore, requires compliance with ANAC AD 2021-02-01 in its entirety, through that incorporation, except for any differences identified as exceptions in the regulatory text of this AD. Service information specified in ANAC AD 2021-02-01 that is required for compliance with ANAC AD 2021-02-01 is available on the Internet at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2021-0456.

## **FAA’s Justification and Determination of the Effective Date**

There are currently no domestic operators of these products. Therefore, the FAA finds that notice and opportunity for prior public comment are unnecessary and that good cause exists for making this amendment effective in less than 30 days.

## **Comments Invited**

The FAA invites you to send any written relevant data, views, or arguments about this AD. Send your comments to an address listed under ADDRESSES. Include “Docket No. FAA-2021-0456; Project Identifier MCAI-2021-00212-T” at the beginning of your comments. The most helpful comments reference a specific portion of the final rule, explain the reason for any recommended change, and include supporting data. The FAA will consider all comments received by the closing date and may amend this final rule because of those comments.

Except for Confidential Business Information (CBI) as described in the following paragraph, and other information as described in 14 CFR 11.35, the FAA will post all comments received, without change, to <https://www.regulations.gov>, including any personal information you provide. The agency will also post a report summarizing each substantive verbal contact received about this final rule.

## **Confidential Business Information**

CBI is commercial or financial information that is both customarily and actually treated as private by its owner. Under the Freedom of Information Act (FOIA) (5 U.S.C. 552), CBI is exempt from public disclosure. If your comments responsive to this AD contain commercial or financial information that is customarily treated as private, that you actually treat as private, and that is relevant or responsive to this AD, it is important that you clearly designate the submitted comments as CBI. Please mark each page of your submission containing CBI as “PROPIN.” The FAA will treat such marked submissions as confidential under the FOIA, and they will not be placed in the public

docket of this AD. Submissions containing CBI should be sent to Krista Greer, Aerospace Engineer, Large Aircraft Section, International Validation Branch, FAA, 2200 South 216th St., Des Moines, WA 98198; telephone and fax 206-231-3223; email [krista.greer@faa.gov](mailto:krista.greer@faa.gov). Any commentary that the FAA receives which is not specifically designated as CBI will be placed in the public docket for this rulemaking.

### **Regulatory Flexibility Act (RFA)**

The requirements of the RFA do not apply when an agency finds good cause pursuant to 5 U.S.C. 553 to adopt a rule without prior notice and comment. Because the FAA has determined that it has good cause to adopt this rule without notice and comment, RFA analysis is not required.

### **Costs of Compliance**

Currently, there are no affected U.S.-registered airplanes. If an affected airplane is imported and placed on the U.S. Register in the future, the FAA provides the following cost estimates to comply with this AD:

#### **Estimated costs for required actions**

<b>Action</b>	<b>Labor cost</b>	<b>Parts cost</b>	<b>Cost per product</b>
Retained action from AD 2020-08-11	1 work-hour X \$85 per hour = \$85	\$0	\$85
New actions	6 work-hours X \$85 per hour = \$510	\$0	\$510

### **Authority for this Rulemaking**

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. Subtitle VII: Aviation Programs, describes in more detail the scope of the Agency's authority.

The FAA is issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701: General requirements. Under that section, Congress

charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

### **Regulatory Findings**

The FAA determined that this AD will not have federalism implications under Executive Order 13132. This AD will not have a substantial direct effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify that this AD:

- (1) Is not a “significant regulatory action” under Executive Order 12866, and
- (2) Will not affect intrastate aviation in Alaska.

### **List of Subjects in 14 CFR Part 39**

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

### **Adoption of the Amendment**

Accordingly, under the authority delegated to me by the Administrator, the FAA amends 14 CFR part 39 as follows:

### **PART 39 - AIRWORTHINESS DIRECTIVES**

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

#### **§ 39.13 [Amended]**

2. The FAA amends § 39.13 by:

- a. Removing airworthiness directive (AD) 2020-08-11, Amendment 39-19903 (85 FR 27112, May 7, 2020), and
- b. Adding the following new AD:



**2021-12-14 Yaborã Indústria Aeronáutica S.A. (Type Certificate Previously Held by Embraer S.A.):** Amendment 39-21601; Docket No. FAA-2021-0456; Project Identifier MCAI-2021-00212-T.

**(a) Effective Date**

This airworthiness directive (AD) becomes effective [INSERT DATE 15 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

**(b) Affected ADs**

This AD replaces AD 2020-08-11, Amendment 39-19903 (85 FR 27112, May 7, 2020) (AD 2020-08-11).

**(c) Applicability**

This AD applies to Yaborã Indústria Aeronáutica S.A. (type certificate previously held by Embraer S.A.) Model ERJ 190-300 and ERJ 190-400 airplanes, certificated in any category, identified in Agência Nacional de Aviação Civil (ANAC) AD 2021-02-01, effective February 15, 2021; corrected February 23, 2021 (ANAC AD 2021-02-01).

**(d) Subject**

Air Transport Association (ATA) of America Code 24, Electrical power.

**(e) Reason**

This AD was prompted by a failure propagation test, which revealed that when complete loss of the electrical digital current (DC) essential bus 2 was induced, the smoke detection system of the forward and aft electrical bays erroneously indicated the presence of smoke via the respective engine indication and crew alerting system (EICAS) messages, and by the determination that a terminating modification is necessary to correct the root cause of the unsafe condition. The FAA is issuing this AD to address the potential loss of all electrical DC essential buses, and consequent loss of electrical power for critical systems of the airplane.

**(f) Compliance**

Comply with this AD within the compliance times specified, unless already done.

**(g) Requirements**

Except as specified in paragraph (h) of this AD: Comply with all required actions and compliance times specified in, and in accordance with, ANAC AD 2021-02-01.

**(h) Exceptions to ANAC AD 2021-02-01**

(1) Where ANAC AD 2021-02-01 refers to its effective date, this AD requires using the effective date of this AD.

(2) Where ANAC AD 2021-02-01 refers to December 9, 2019 (the effective date of ANAC Emergency AD 2019-12-01), this AD requires using May 22, 2020 (the effective date of AD 2020-08-11).

(3) The “Alternative Methods of Compliance (AMOC)” section of ANAC AD 2021-02-01 does not apply to this AD.

(4) Where Part II, paragraph (b)(2), of ANAC AD 2021-02-01 specifies that after modification of the electrical wiring of the mid electronic bay and backup smoke detectors the temporary airplane flight manual (AFM) revisions “must be removed,” this AD requires removing the temporary AFM revisions before further flight after completing the modification required by Part II, paragraph (b)(1), of ANAC AD 2021-02-01.

**(i) Other FAA AD Provisions**

The following provisions also apply to this AD:

(1) *Alternative Methods of Compliance (AMOCs)*: The Manager, Large Aircraft Section, International Validation Branch, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or responsible Flight Standards Office, as appropriate. If sending information directly to the Large Aircraft

Section, International Validation Branch, send it to the attention of the person identified in paragraph (j) of this AD. Information may be emailed to: 9-AVS-AIR-730-AMOC@faa.gov. Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the responsible Flight Standards Office.

(2) *Contacting the Manufacturer:* For any requirement in this AD to obtain instructions from a manufacturer, the instructions must be accomplished using a method approved by the Manager, Large Aircraft Section, International Validation Branch, FAA; or ANAC; or ANAC's authorized Designee. If approved by the ANAC Designee, the approval must include the Designee's authorized signature.

**(j) Related Information**

For more information about this AD, contact Krista Greer, Aerospace Engineer, Large Aircraft Section, International Validation Branch, FAA, 2200 South 216th St., Des Moines, WA 98198; telephone and fax 206-231-3223.

**(k) Material Incorporated by Reference**

(1) The Director of the Federal Register approved the incorporation by reference (IBR) of the service information listed in this paragraph under 5 U.S.C. 552(a) and 1 CFR part 51.

(2) You must use this service information as applicable to do the actions required by this AD, unless this AD specifies otherwise.

(i) Agência Nacional de Aviação Civil (ANAC) AD 2021-02-01, effective February 15, 2021; corrected February 23, 2021.

(ii) [Reserved]

(3) For ANAC AD 2021-02-01, contact National Civil Aviation Agency, Aeronautical Products Certification Branch (GGCP), Rua Laurent Martins, nº 209,

Jardim Esplanada, CEP 12242-431 – São José dos Campos - SP, Brazil; telephone 55 (12) 3203-6600; email [pac@anac.gov.br](mailto:pac@anac.gov.br); Internet [www.anac.gov.br/en/](http://www.anac.gov.br/en/). You may find this IBR material on the ANAC website at <https://sistemas.anac.gov.br/certificacao/DA/DAE.asp>.

(4) You may view this material at the FAA, Airworthiness Products Section, Operational Safety Branch, 2200 South 216th St., Des Moines, WA. For information on the availability of this material at the FAA, call 206-231-3195. This material may be found in the AD docket on the Internet at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2021-0456.

(5) You may view this material that is incorporated by reference at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, email [fedreg.legal@nara.gov](mailto:fedreg.legal@nara.gov), or go to: <https://www.archives.gov/federal-register/cfr/ibr-locations.html>.

Issued on June 4, 2021.

Gaetano A. Sciortino, Deputy Director for Strategic Initiatives,  
Compliance & Airworthiness Division,  
Aircraft Certification Service.

[FR Doc. 2021-14612 Filed: 7/8/2021 8:45 am; Publication Date: 7/9/2021]